

Application Serial No. 10/798,001

Docket: CU-3633

**Amendments to the Claims**

The listing of claims presented below replaces all prior versions, and listings, of claims in the application.

RECEIVED  
CENTRAL FAX CENTER  
JAN 12 2007

**Listing of claims:**

13. (previously presented) A substrate for bio-microarray, wherein the substrate comprises an anti-reflection layer formed on the surface of the substrate, wherein the anti-reflection layer has a fine uneven structure comprising a fine particle of diameter in a range of 50 nm to 300nm wherein said fine uneven structure comprises an immobilization layer formed in a pattern for immobilizing a probe biomolecule thereon.

14. (currently amended) A substrate for bio-microarray ~~The substrate of claim 43, wherein the substrate comprises an anti-reflection layer formed on the surface of the substrate, wherein the anti-reflection layer has a fine uneven structure having~~ wherein the fine uneven structure has a depth in a range of 80 nm to 250nm wherein said fine uneven structure comprises an immobilization layer formed in a pattern for immobilizing a probe biomolecule thereon.

15. (previously presented) A substrate for bio-microarray, wherein the substrate comprises an anti-reflection layer formed on the surface of the substrate, wherein the anti-reflection layer has a fine porous structure, and further comprises an immobilization layer formed in a pattern on the anti-reflection layer for immobilizing a probe biomolecule thereon.

16. (previously presented) The substrate of claim 13, further comprising a mark formed on the substrate for positional detection.

17. (previously presented) The substrate of claim 14, further comprising a mark formed on the substrate for positional detection.

18. (previously presented) The substrate of claim 15, further comprising a mark formed on the substrate for positional detection.

Application Serial No. 10/798,001

Docket: CU-3633

19. (currently amended) A bio-microarray ~~biomicroarray~~, comprising the substrate of claim 13 and a probe biomolecule immobilized on the substrate.

20. (currently amended) A bio-microarray ~~biomicroarray~~, comprising the substrate of claim 14 and a probe biomolecule immobilized on the substrate.

21. (currently amended) A bio-microarray ~~biomicroarray~~, comprising the substrate of claim 15 and a probe biomolecule immobilized on the substrate.

22. (new) A bio-microarray device comprising:

a substrate is selected from the group consisting of a metal, a semiconductor, a glass, a polymer material and admixtures thereof;

an anti-reflection layer formed on the surface of the substrate wherein the anti-reflection layer comprising fine particles coated with a polymer resin material selected from the group consisting of meta-acrylic-based resins, styrene-based resins, cycloolefini-based resins, polyester resins, polycarbonate resins, polydiallyldimethylammonium resin, a crosslinked polyallylamine polyacrylic resin and admixtures thereof, wherein the anti-reflection layer has a fine uneven structure comprising a fine particle of diameter in a range of 50 nm to 300 nm; and

an immobilization layer comprising a thin film of poly-L-lysine formed in a pattern for immobilizing a probe biomolecule thereon.

23. (new) The bio-microarray device of claim 22 wherein the fine particles are selected from the group consisting of inorganic material consisting of  $\text{MgF}_2$ ,  $\text{SiO}_2$ ,  $\text{AlF}_3$ ,  $\text{CaF}_2$ ,  $\text{LiF}$ ,  $\text{NaF}$ ,  $\text{ThF}_4$  and admixtures thereof.

24. (new) The bio-microarray device of claim 22 wherein the fine particles are selected from the group consisting of organic material consisting of crosslinked acrylic fin particles, uncrosslinked acrylic fine particles, crosslinked polystyrene fine particles, uncrosslinked polystyrene fine particles, monodisperse polymethyl methacrylate fine particles and admixtures thereof.

Application Serial No. 10/798,001

Docket: CU-3633

**25. (new) The bio-microarray device of claim 22 wherein the anti-reflection layer is a laminate composed of alternating layers of polyallyamine and polyacrylic.**